DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 70.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-006236
Date Inspected: 15-Apr-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Japan Steel Works

OSM Arrival Time: 730
OSM Departure Time: 1630
Location: Muroran, Japan

CWI Name: Chung Fu Kuan

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☐ Yes	☑ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Tower, Jacking, and Deviation Saddles

Summary of Items Observed:

On this date Caltrans OSM Quality Assurance (QA) Inspector Mr. Art Peterson was present during the times noted above for observations relative to the work being performed in Fabrication shop #4 and the Foundry shop at Japan Steel Works.

Fabrication Shop #4

NDT Operation on Saddle: Tower Saddle Segment T1-1 (cast welded to steel section- final heat treat condition)

The QA Inspector observed NIS NDT personnel Mr. K. Kobayashi (#141), Mr. K. Makaiyama (#72), and Mr. M. Sato (#81) performing ultrasonic test (UT) inspection on complete-joint penetration groove welds 7Y-5L-1, 7Y-5L-2, and 7Y-5L-3 on the rib to base plate of tower saddle segment T1-1. The UT inspection was in accordance with AWS D1-5-2002 using Procedure #10 and to the acceptance-rejection criteria in Table 6.4. The QA Inspector observed that the UT inspection was in process at the end of the QA Inspectors' shift.

Machining Operation of Saddle: West Deviation Saddle Segment W2-E2 (cast welded to steel section)

The QA Inspector observed that the machining operation is being performed on west deviation saddle segment W2-E2 in Machine Shop #2. The QA Inspector observed that no machining was performed on this date.

Machining Operation of Saddle: West Deviation Saddle Segment W2-E1 (cast welded to steel section)

The QA Inspector observed that west deviation saddle segment W2-E1 is in Machine Shop #2 to have the lifting lugs machined /milled off. The QA Inspector observed that no work was performed on this date.

Storage of Saddle: Tower Saddle Segment T1-3 (steel section)

The QA Inspector observed that tower saddle segment T1-3 (steel section) is located in Fabrication Shop #4 for storage until tower saddle segment T1-3 (cast section) is ready for the fit-up operation. The QA Inspector observed that no work was performed on this date.

Grinding Operation on Saddle: West Deviation Saddle Segment W2-E3 (steel section)

The QA Inspector observed that JSW personnel completed the grinding operation on the rib plates and stem plate's edges (face of bevel and root face of double bevel prepared groove) of west deviation saddle W2-E3 (steel section). The QA Inspector observed that no work was performed on this date.

Thermal Cutting Operation on Saddle: West Deviation Saddle Segment W2-W1 (steel section)

The QA Inspector observed that JSW personnel were performing the thermal cutting operation on west deviation saddle segment W2-W1 (steel section). The JSW personnel were thermally cutting the bevels to final dimension of the double bevel groove on the rib plates and stem plate. The QA Inspector observed that the thermal cutting operation was in process at the end of the QA Inspectors' shift.

Welding Operation on Saddle: Tower Saddle Segment T1-2 (cast being welded to steel section)

The QA Inspector observed the partial-joint penetration (PJP) and complete-joint penetration (CJP) groove weld operation on rib (steel section) to rib (cast section) of tower saddle segment T1-2. The QA Inspector observed QC Inspector Mr. Chung Fu Kuan verify prior to and during the welding operation that the preheat temperature of 110 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. M. Kubota (74-3666) on CJP weld joint no. 8Y-12U-2, Mr. M. Kashiwada (08-2008) on CJP weld joint no. 8Y-12U-1, Mr. Y. Marayama (94-5234) on PJP weld joint no. 8Y-11U, and Mr. T. Kawakami (08-5079) on PJP weld joint no. 8Y-10U were in compliance with WPS SJ-3012-5 per the FCAW process in the (1G) flat position. The QA Inspector observed that the welding operation was in process at the end of the QA Inspectors' shift.

Welding Operation on Saddle: West Deviation Saddle Segment W2-W2 (steel section)

The QA Inspector observed the partial-joint penetration groove weld operation on the rib plate to base plate portion of west deviation saddle W2-W2. The QA Inspector observed QC Inspector Mr. Chung Fu Kuan verify prior to the start of the welding operation that the preheat temperature of 160 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. Y. Nakano (08-2011) on rib plate W2-Y-17L-1/2 (inside) and Mr. K. Nakasato (91-2247) on rib plate W2-Y-4L-1/2 (outside) were in compliance with WPS SJ-3011-2 per the SMAW process in the (2G) horizontal position using 9018M electrode. The QA Inspector observed that the partial-joint penetration groove weld operation was in process at the end of the QA Inspectors' shift.

Welding Operation on Saddle: West Deviation Saddle Segment W2-E3 (cast section)

The QA Inspector observed that the welding of the lifting lugs per the FCAW process in the (3G) vertical position to one end of the trough was completed on the build-up area section of weld metal- (weld surface layers). The QA Inspector observed that no work was performed on this date.

Heat Treatment Operation of Saddle: Tower Saddle Segment T1-3 (cast section)

The QA Inspector was informed by JSW representative Mr. Hideaki Kon that tower saddle segment T1-3 is being post weld heat treated for the weld surfacing (buttering operation) that was performed and completed on the square edges of the rib and stem double groove weld areas of the saddle (cast section). The QA Inspector observed that the post weld heat treatment operation was in process at the end of the QA Inspectors' shift.

Foundry Shop:

NDT Operation on Saddle: West Deviation Saddle Segment W2-W2 (cast section)

The QA Inspector observed that NIS NDT Personnel prepared the west deviation saddle segment W2-W2 for ultrasonic testing (UT) inspection by (laying out) marking (300 x 300) mm grid lines on the inside and outside of the trough and also on the rib sections for the purpose of tracking and for guidance in scanning. The QA Inspector observed that the layout operation was completed and no UT was performed on this date.

Grinding Operation on Saddle: East Saddle E2-E1

The QA Inspector observed that JSW were performing the grinding operation of the shaped areas on the outside of the trough section and on the rib sections where the removal of cast material- (scarfing operation by the air-carbon-arc method) on the rough casting was previously performed on east saddle E2-E1. The purpose of the grinding operation is profile the areas to a smooth finish for the NDT operation. The QA Inspector observed that the grinding operation was in process at the end of the QA Inspectors' shift.

NDT Operation on Saddle: East Saddle E2-W1 (cast section)

The QA Inspector observed that NIS Quality Control NDT personnel were performing the liquid penetrant testing (PT) on the outside of the trough (cast section) and rib sections for information only. The QA Inspector observed that the PT inspection in process at the end of the QA Inspectors' shift.

Storage of Saddle: West Deviation Saddle Segment W2-W1 (cast section)

The QA Inspector observed that west deviation saddle W2-W1 (cast section) is located in the storage yard prior to being moved into fabrication shop #4. The QA Inspector observed that no work was performed on the saddle (cast section) on this date.

Grinding Operation on Saddle: West Deviation Saddle Segment W2-W3 (cast section)

The QA Inspector observed JSW personnel completed the grinding operation on one side of the segment on the areas that had both major and minor weld repairs performed on the trough, stem and rib sections of west deviation saddle W2-W3 (cast section). The QA Inspector observed the segment has been flipped over for the JSW personnel to complete the grinding operation of the major and minor repairs on that side. The QA Inspector observed that the grinding operation was in process at the end of the QA Inspectors' work shift.

Machining Operation of Saddle: West Jacking Saddle (cast section)

The QA Inspector observed that the west jacking saddle (cast section) is located in Machine Shop #4 to have the rough machining of the base plate, inside of trough, and the end sections of the west jacking saddle. The QA Inspector observed that the machining was being performed inside of the trough section of the west jacking saddle.

Unless otherwise noted, all observations reported on this date appeared to be in general compliance with applicable contract documents.

Summary of Conversations:

No significant conversations were reported on this date.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy, 510 385-5910, who represents the Office of Structural Materials for

your project.

Inspected By:	Peterson,Art	Quality Assurance Inspector
Reviewed By:	Lanz,Joe	QA Reviewer